REMARKS:

Applicant has carefully studied the nonfinal Examiner's Action and all references cited therein. The amendment appearing above and these explanatory remarks are believed to be fully responsive to the Action. Accordingly, this important patent application is now believed to be in condition for allowance.

Applicant responds to the outstanding Action by centered headings that correspond to the centered headings employed by the Office, to ensure full response on the merits to each finding of the Office.

Claim Rejections – 35 U.S.C. § 102

Applicant acknowledges the quotation of 35 U.S.C § 102(e).

Claims 1, 3, 5, 10, 16, 41 and 42 stand rejected under 35 U.S.C § 102(e) as being anticipated by Narang et al. (U.S. Patent No. 6,991,876 B2).

With respect to claims 1 and 41, the Office states that Narang et al. teaches an electrochemical cell comprising an aluminum anode, a cathode comprising lithium perioxide (or sodium peroxide) and a separator (an electrically insulating barrier), at col. 6, lines 4-12, col. 8, lines 1-8 and claim 1.

Claims 1 and 41 have been amended to more clearly describe that which the applicant regards as the invention. Amended claim 1 recites an electrochemical cell comprising an aluminum anode and a solid alkali metal peroxide cathode, the cathode separated from the aluminum anode by an electrically insulating barrier, the aluminum anode and the solid alkali metal peroxide cathode to participate in an electrochemical reaction to release energy from the cell upon the introduction of an aqueous activator. As such, the present invention discloses and claims an electrochemical cell exhibiting an aluminum-alkali peroxide reaction in an aqueous system. The aqueous dissolution of the solid alkali metal in the cathode controls the level of the required reactants for the aluminum-peroxide electrochemical reaction as described throughout the specification.

In contrast, Narang et al. describes a battery system that includes an anode comprising a metal, a cathode comprising an active oxygen species, and a non-aqueous electrolyte, wherein oxidation of the metal and reduction of the active oxygen species provides the current of the battery. As such, the battery system of Narang et al. is a non-aqueous system. Accordingly, Narang et al. does not describe an aluminum anode and a solid alkali metal peroxide cathode that participate in an electrochemical reaction to release energy from the cell upon the introduction of an aqueous activator as disclosed and claimed by the present invention.

For the reasons indicated above, Applicant believes that amended claim 1 is not anticipated by Narang et al. and is believed to be in condition for allowance.

Claims 2-17, 39 and 40 are dependent upon claim 1, which has been shown to be allowable, and therefore are allowable as a matter of law.

Independent claim 41 has been amended to more clearly describe that which the Applicant regards as the invention. Amended claim 41 recites an electrochemical cell comprising a metal anode and a solid alkali metal peroxide cathode, the cathode separated from the metal anode by an electrically insulating barrier, the metal anode and the cathode to participate in an electrochemical reaction to release energy from the cell upon the introduction of an aqueous activator. As such, the present invention discloses and claims an electrochemical cell exhibiting a metal-alkali peroxide reaction in an aqueous system. The aqueous dissolution of the solid alkali metal in the cathode controls the level of the required reactants for the metal-peroxide electrochemical reaction as described throughout the specification.

In contrast, Narang et al. describes a battery system that includes an anode comprising a metal, a cathode comprising an active oxygen species, and a non-aqueous electrolyte, wherein oxidation of the metal and reduction of the active oxygen species provides the current of the battery. As such, the battery system of Narang et al. is a non-aqueous system. Accordingly, Narang et al. does not describe a metal anode and a solid alkali metal peroxide cathode that participate in an electrochemical reaction to release energy from the cell upon the introduction of an aqueous activator as disclosed and claimed by the present invention.

For the reasons indicated above, Applicant believes that amended claim 41 is not anticipated by Narang et al. and is believed to be in condition for allowance.

Claim 42 is dependent upon claim 41, which has been shown to be allowable, and therefore is allowable as a matter of law.

Claim Rejections – 35 U.S.C. § 103

Applicant acknowledges the quotation of 35 U.S.C § 103(a).

Claims 1, 2, 7-9, 11-15, 40 and 41 stand rejected under 35 U.S.C § 103(a) as being unpatentable over Marsh et al. (US 5,445,905) in view of Momyer (US 4,001,043).

With respect to claims 1, 2, 40 and 41, the Office states that Marsh et al. teaches an electrochemical cell comprising an anode of aluminum (12), a catholyte of hydrogen peroxide (18) and a spacer (30) at Figure 1, column 2, lines 20-54 and example 1. The Office goes on to state that while Marsh et al. does not teach the use of an alkali metal peroxide cathode, Momyer teaches a metal-water electrochemical cell comprising a lithium anode, a silver cathode and lithium hydroxide electrolyte in which the anode and the cathode are immersed. The Office states that Momyer further discloses an anode moderator consisting of soluble peroxide ions, including hydrogen peroxide, sodium peroxide, sodium super oxide, lithium peroxide, potassium peroxide and potassium super oxide at claims 1 and 2, and column 4, lines 59-68. The Office concludes that hydrogen peroxide, lithium peroxide and potassium peroxide are considered functionally equivalent soluble peroxide ions and that therefore, it would have been obvious to one of ordinary skill in the art to substitute lithium peroxide (or potassium peroxide) for the hydrogen peroxide in the electrochemical cell disclosed by Marsh.

Applicant respectfully disagrees with the finding of the Office. The Office is suggesting that it would have been obvious to substitute lithium peroxide taught by Momyer for the hydrogen peroxide in the electrochemical cell disclosed by Marsh and that by doing, so the present invention would be considered obvious. To establish a *prima facie* case of obviousness, a reason, suggestion, or motivation from the prior art as a whole for the person of ordinary skill to have combined or modified the references must be provided. The Federal Circuit has established that obviousness cannot be established by combining the teachings of the prior art to

produce the claimed invention, absent some teaching, suggestion or incentive supporting the combination. Additionally, it is well established that the suggestion or teaching must come from the prior art and not from the invention itself. No motivation to combine these references has been identified in either of the references provided by the Office. The Applicant respectfully points out that the electrochemical reactions presented in the present invention and in the prior art references are extremely complex and involve not only the electrochemical reaction itself, but also the corrosion reaction, the solid dissolution and possible peroxide decomposition. As such, Applicant contends that it would not be obvious to one of ordinary skill in the art to substitute lithium peroxide (or potassium peroxide) for the hydrogen peroxide in the electrochemical cell disclosed by Marsh as suggested by the Office. Marsh describes a cell having an aluminum anode and a hydrogen peroxide catholyte. There is no suggestion by Marsh to substitute an alkali peroxide for the hydrogen peroxide as suggested by the Office.

In addition, both Marsh and Momyer teach away from substituting lithium peroxide for the hydrogen peroxide as suggested by the Office. Marsh teaches a cell having an aqueous hydrogen peroxide catholyte and an aluminum anode. Momyer teaches a cell having a lithium hydroxide catholyte with a hydrogen peroxide "moderator" and a lithium anode. As such, both Marsh and Momyer require the presence of hydroxide ions for the cathode reaction to be initiated. The requirement for hydroxide ions in the cathode reaction of Marsh is illustrated in Eq. 3:

CATHODE:

$$H_2O_2 + OH^- \rightarrow HO_2^- + H_2O + 2e^- \rightarrow 3OH^-, \quad E^\circ = 0.24\ V \qquad (3)$$

The requirement for hydroxide ions (from lithium in the cell) in the cathode reaction of Momyer is evident in claim 1 of Momyer in which the claims elements include an aqueous lithium hydroxide electrolyte and an anode moderator. The anode moderator for improving the efficiency of the cell by reducing the anode's sensitivity to change in the electrolyte molarity, flow rate and temperature, the anode moderator consisting essentially of soluble peroxide ions. As such, it is clear that the operation of the battery of Momyer requires both the aqueous lithium hydroxide and the soluble peroxide ions.

Accordingly, Marsh and Momyer teach away from substituting lithium peroxide for the hydrogen peroxide as suggested by the Office, because it is clear that the system of Marsh and the system of Momyer both require hydroxide ions for the operation of the cell. If the hydrogen peroxide of the Marsh system were replaced by lithium peroxide, the cell would no longer be operational because the hydroxide ions responsible for the initiation of the electrochemical reaction would no longer be available.

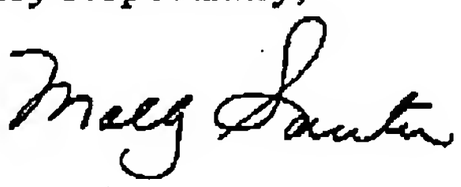
For the reasons cited above, Applicant believes that amended independent claims 1 and 41 are patentable over Marsh in view of Momyer and are believed to be in condition for allowance.

Claims 2-17, 39 and 40 are dependent upon claim 1, which has been shown to be allowable, and therefore are allowable as a matter of law.

Claim 42 is dependent upon claim 41, which has been shown to be allowable, and therefore is allowable as a matter of law.

If the Office is not fully persuaded as to the merits of Applicant's position, or if an Examiner's Amendment would place the pending claims in condition for allowance, a telephone call to the undersigned at (813) 925-8505 is requested.

Very respectfully,



SIGNATURE OF PRACTITIONER

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CERTIFICATE OF FACSIMILE TRANSMISSION

(37 C.F.R. 1.8(a))

I HEREBY CERTIFY that this Amendment A is being transmitted by facsimile to the United States Patent and Trademark Office, Art Unit 3172, Attn.: Dah Wei D Yuan, (517) 273-8300 on January 24, 2008.

Dated: January 24, 2008

April Turley